Alfalfa Hay for Horses

Bob Coleman, Ph.D., PAS
Department of Animal & Food Sciences
University of Kentucky

When horse owners consider hay for their animals, a number of criteria are generally considered. Of major importance is the hay must be free of mold and dust. It needs to contain nutrients needed by the horse and it must be palatable. If these criteria are met, the type of hay should not matter. However, that is not the case with many horse owners. When discussing the selection of hay, many owners first consider the type of hay. Can it be alfalfa or should it be a grass or how about a mix of grass and a legume. If a group of horse owners were to be polled the results would reflect some who felt alfalfa was the best hay for horses, some would suggest it never be fed and a few would ride the fence being neither strongly for or against alfalfa hay.

It is widely know that alfalfa hay is an excellent source of nutrients. In table 1, there is a comparison between a mid bloom alfalfa and a mid bloom timothy hay. From the comparison, it is evident that the alfalfa can supply more digestible energy, more crude protein and calcium than the timothy hay. If alfalfa hay is comparatively priced with grass hay, cost per unit of nutrients makes it a better buy.

Table 1. A comparison of nutrient content of Alfalfa Hay and Orchardgrass hay (on Dry Matter Basis)

	DM %	DE Mcal/kg	Crude Protein %	Calcium %	Phosphorus %
Mid Bloom Alfalfa	91.0	2.28	18.7	1.31	0.24
Mid Bloom Timothy	86.0	1.99	9.7	0.48	0.23

Adapted from the Nutrient Requirements of Horses. Fifth Revised Edition 1989.

So why is the horse owner reluctant to feed alfalfa hay? For some horse owners, they feel that alfalfa hay will provide too much in the way of energy and protein for the horses they are feeding. In table 2, there is a comparison of the percentage of required nutrients supplied by a specific daily intake of hay. In the examples, the daily intakes were held to 2% of body weight or less. For a horse at maintenance, eating alfalfa hay at 1.65% of its body weight per day, both digestible energy and protein requirements

are met. In fact, the protein requirement for that horse is greatly exceeded. The same horse being fed the timothy hay in the example would need to be fed more hay in order to meet its nutrient requirements or have a supplemental concentrate added to the program. For some horse owners feeding more forage per day is the preferred situation as the extra time spent eating hay may keep the horse from developing certain behaviors that have been linked to boredom. For the maintenance horse, eating such a small amount of alfalfa hay each day the total time spent eating will be short and this may lead to horses developing bad habits such as wood chewing.

Table 2. The percentage of Nutrient Requirements provided to a 1100 lb (500 kg) horse fed either with a Mid Bloom Alfalfa Hay or Mid Bloom Timothy Hay % of Requirement Provided.

Horse Type	Hay Type	Hay Intake *	DE	Crude Protein
Maintenance	Alfalfa	18	102	118
	Timothy	18	88	60
Lactation**	Alfalfa	22	73	118
	Timothy	22	62	60
Light Work***	Alfalfa	18	82	169
	Timothy	18	70	86

* as fed
** first 3 months of lactation
*** Horses used for pleasure riding and showing.

Based on Nutrient needs for a 1100 lb (500 kg) Horse as published in Nutrient Requirements of Horses. Sixth Revised Edition 2007

A more common concern for horse owners using alfalfa hay is providing more nutrients than the horse requires. Again using the maintenance horse eating 1.65% of its body weight could easily eat 2.0% or more of good quality alfalfa hay. The result of this scenario is an overweight horse if access to feed is not restricted. The reality is horses can get fat on alfalfa hay but it is because the owners will not limit the intake of the hay.

In all examples found in table 2, those horses consuming the alfalfa hay will have crude protein intakes that exceed their requirements. This excess protein will be excreted resulting in greater water needs by the horse and wetter stalls. It is not uncommon for a farm feeding alfalfa hay to horses in the barn to have a significant ammonia problem because of the excessive protein intake.

As with any feeding program, the selection of the feeds to be used should reflect the nutrient needs of the horses being fed. As noted in table 2, the lactating mare's

requirements for protein are met with fed alfalfa hay. The intake indicated in the table also provides over 70% of the mare's digestible energy needs as well. If the grass hay is the basis for the lactating mare's diet, a concentrate that includes a higher level of protein plus more digestible energy would be needed to meet requirements. The alfalfa based diet allows the horse owner to use a concentrate with lower protein content and generally feed less concentrate to the horse.

As with the maintenance horses and the broodmare, the horse at light work consumes a greater portion of its nutrient requirements, when alfalfa hay is the basis for the feeding program. However concerns with feeding levels of protein in excess of the horse's requirements and concerns with wet stalls and ammonia in the barn may cause horse owners to select grass type hay and not pure alfalfa hay.

A concern with performance horses fed more concentrated diets is the risk of ulcers. It has been reported that stabled horses in training have a greater incidence of ulcers when compared to horses maintained on pasture. The amount of hay offered has been implicated in this increased risk of ulcers. Horses are grazers that eat small amounts of feed on a frequent basis. This continuous consumption of forage has horses chewing more which results in more saliva production which aids in buffering stomach acids. While feeding high quality alfalfa hay may result in a lower feed intake, research has shown that alfalfa hay can reduce the incidence of ulcer formation. Researchers in Tennessee reported a reduction in the incidence of ulcers when horses were fed alfalfa hay verses grass hay. More recently, Texas researchers have reported that feeding alfalfa hay resulted in a reduced incidence of ulcers in yearling horses. The benefit of alfalfa hay is related to its buffering capacity due to the higher levels of protein and calcium in comparison to grass hay.

Horse owners are or should be concerned about the presence of mold in the hay they are feeding regardless of what type of hay it is. It has been noted by some horse owners that there is an increase presence of mold in alfalfa hay. While there is potential for this to be true, the mold may be the result of the hay producers putting up hay with slightly higher moisture content in order to preserve the leaf content of the hay. The presence of the mold is more a function of hay production, not the fact it is alfalfa. For horse owners, alfalfa hay can be an effective feed, however, it is important that intakes of nutrients are controlled for certain classes of horse in particular, those horses with lower nutrient needs.

For those supplying hay, what does the horse owner want?

1) A hay that is free of mold and dust. Moldy hay has been implicated as a cause of the respiratory condition called heaves. The moldy hay causes an allergic reaction which affects the horse's ability to exhale. The hay fed to horses must be free of mold.

2) A consistent product. Hay that is green, leafy with a fresh odor. In addition, bales need to be consistent throughout the lot of hay. Not always easy to do if a mixed hay is produced.

3) Free of trash and other potentially harmful things.

4) A bale size that is consistent with the management practices of the horse owner. If the horse owner does not have equipment to move larger packages of hay or appropriate places to store hay, then a small square bale may be the package most desired. It is difficult for the owner to change how they care of feed their horses to accommodate large hay packages.

The bottom line is alfalfa hay does have a place in feeding programs for horses. It is generally a hay that is well accepted by the horse and provides significant levels of nutrients. Alfalfa hay and horses are a good mix when good feed management is provided.